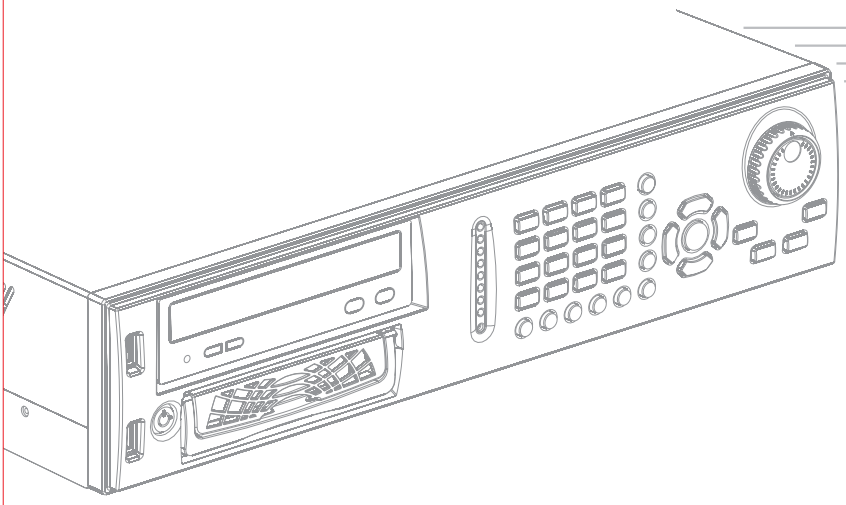
Digital Surveillance System

STANDALONE DVR



VD 1650C

TRIPLEX 16 CHANELL DVR

2005 DEC. Ver 1.1

VOOK PROFESSIONAL MONITORING

Safety precations

WARNING

- Install this equipment avoiding a direct ray of light, heats and moistures.
  Doing not, can result in lowering efficiency, electric shock or fire.
- Do not pull electric wire or do not touch power plug with wet hands.
  Can result in electric shock or fire.
- Do not bend the power cable forcedly or do not press it with heavy materials.
  Can result in electric shock or fire.
- Do not bend the power cord or loose outlet plug.
  Can result in electric shock or fire.
- Do not use the outlet fully.
  Can result in electronic shock or fire.
- Do not disassemble, repair or convert this product without permission.
  Can result in electric shock or fire. When repair is required, contact the service Center.
- Do not open the cover of the product at your convenience or do not insert Inductive stick into the ventilation hole.
  Especially SMPS is open, so only professional technicians are allowed to work on.

CAUTION

Do not place equipment on the inclined or uneven plane.
Can cause lowering of efficiency or malfunction.

Do not vibrate or shock in operation.
Can cause out of order with equipment and hard disk(HDD).

	CAUTION	
	Make sure the voltage selector switch (115V/230V) is set to the appropriate setting before plugging in.	

Content check

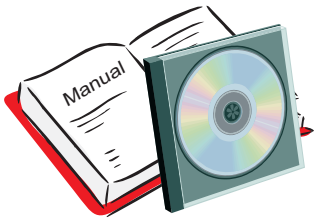
Open the box at the clean and even place. And read user manual thoroughly before you install.

Contents

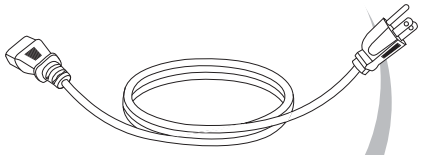
- DVR main frame
- software CD and Manual
- HDD Key
- Power cord set

DVR mainframe

Hdd Key
(only with HDD rack)



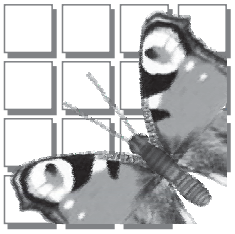
Software CD / Manual



Power cord set

CONTENT

16CH STANDALONE DVR



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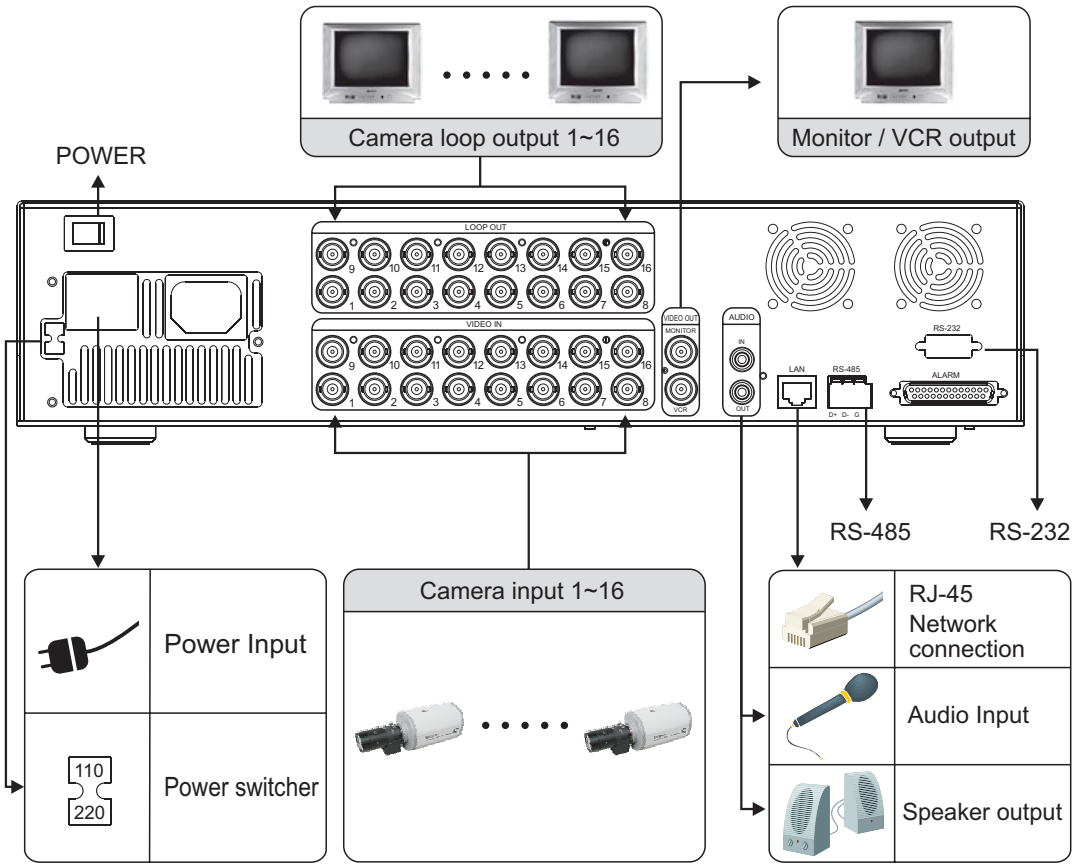
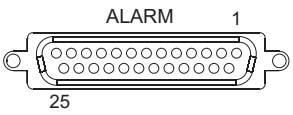
1 KEY FEATURES

Video Type	NTSC	PAL
Video Input	16 CH Input / 1V p-p / 75 Ohm / BNC	
Audio Input	1 CH Input / RCA	
Video Output	16 CH Looping Output/BNC, 2 CH Monitor Output/BNC	
Audio Output	1 CH Output / RCA	
Display Mode	Full Mode, 4/8/9/13/16 Division, Circulate Auto Switcher	
Display Resolution	720 x 480	720 x 576
Recording Resolution	720 x 240	720 x 288
Compression Rate (KB/image)	Normal image 13~17KB	15~19KB
	Complex image 20~25KB	22~27KB
Recording Speed	Max. 120 fps	Max. 100 fps
Compression Algorithm	Modified M-JPEG	
OS	Embedded Linux	
Triplex	Record / Playback / Network	
Recording Mode	Full-time, Manual, Schedule, Event	
Schedule Recording	Choose recording section to minimum at 1 min. time intervals during days of week	
Status Indicator (LED)	Power, Record, Playback, Network, USB Archive, Zoom magnify, Freeze, Key lock	
Event Mode	Alarm Trigger, Motion Trigger Recording Duration: 1~99 minute	
Alarm Connect	Alarm In (16ch) / Relay Out (1ch / N.O. or N.C. selectable)	
Playback	Normal: x1 multiple speed	
	Fast Forward: x2 / x4 / x8 / x16 multiple speed	
	Fast Backward: x2 / x4 / x8 / x16 multiple speed	
	Move 1 image per pushbutton at still image (STILL Controller)	
	Searching function: Move to search list, Time/ Event/ Manual/ Schedule	
Network Protocol	TCP/IP, DHCP	
Communication Protocol	RS-232, RS-485	
HDD Type	EIDE / ATA-66 / 3.5 inch / 7200rpm	
HDD Management	Pre-formatting not required (Automatic formatting by system)	
P/T/Z Control	Internal Communication Protocol, RS-485 interface Control (Option)	
Archiving	USB 1.1, CD-R/W (Option)	
Firmware Update	Use mix with USB 1.1 to arrive at USB flash drive firmware update	
Multinational Language	English / Chinese (option) / Other (Option)	
Control Mode	Faceplate / IR remote-controlled (Option) / Remote keypad ctrl (Option)	
Remote Control	Net Viewer (PC application program) to LAN download	
Network Function	Live Play Viewer / Network event list Play Back / USB flash drive File Play	
Power Supply	AC I/P VOL: AC115V/AC230V~CUR: 4/2A MAX. FREQ: 50~60Hz	
Unit Dimension	43 (W) x37 (D) x9.6 (H) cm (standard 2U machine)	
Weight	Unit Weight (8kg) (NO Hard Discs)	
Ambient Temperature	5 ° C ~ 40 ° C	

2 REAR PANEL

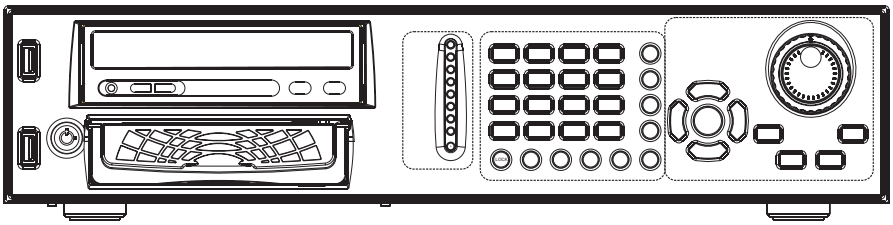


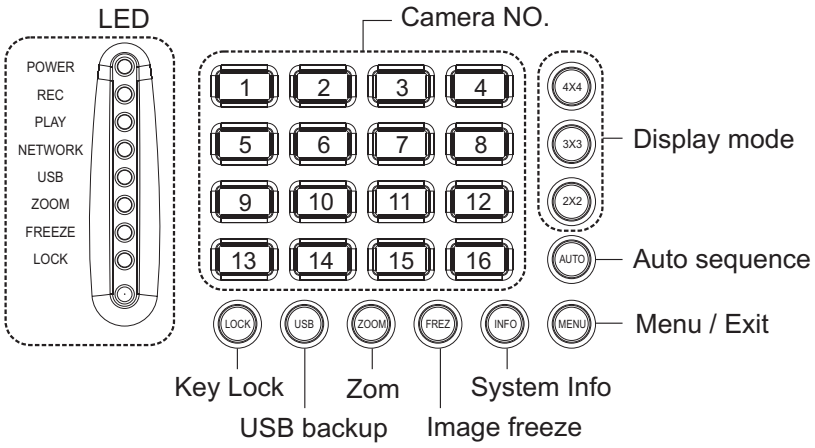


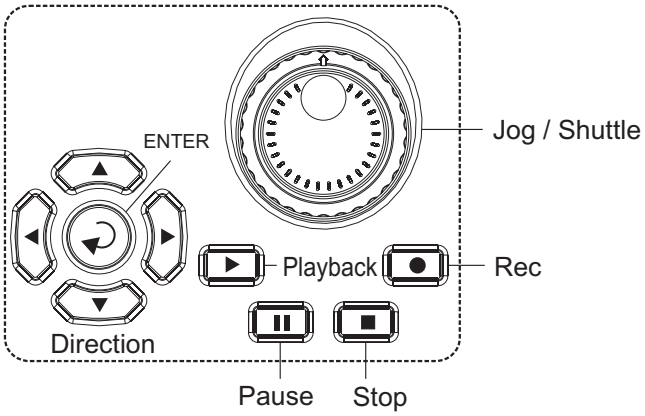
Alarm sensor input / output (DB25)

1˙ Sensor input of camera 1	10˙Sensor input of camera 10	19˙NUL
2˙ Sensor input of camera 2	11˙Sensor input of camera 11	20˙GND
3˙ Sensor input of camera 3	12˙Sensor input of camera 12	21˙Relay com output
4˙ Sensor input of camera 4	13˙GND	22˙Relay N.C output
5˙ Sensor input of camera 5	14˙Sensor input of camera 13	23˙Relay N.O output
6˙ Sensor input of camera 6	15˙Sensor input of camera 14	24˙GND
7˙ Sensor input of camera 7	16˙Sensor input of camera 15	25˙GND
8˙ Sensor input of camera 8	17˙Sensor input of camera 16	
9˙ Sensor input of camera 9	18˙NUL	

3 FRONT PANEL





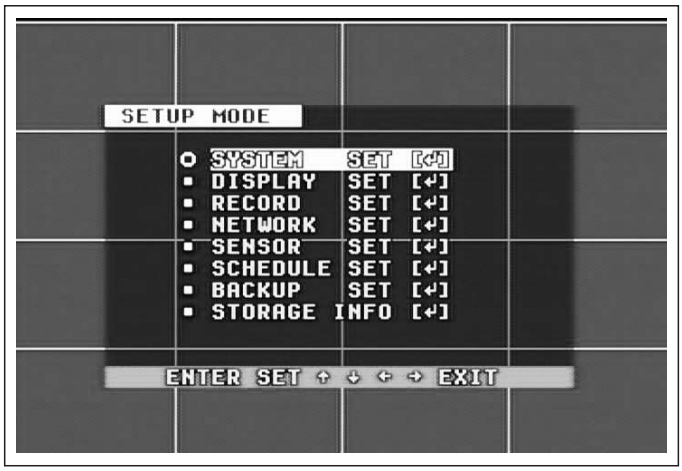


FRONT PANEL

- **Camera No** : To display channel in full screen, press camera No.
- **Display Mode** : Full screen by CH, 4-div, 9-div or 16-div are available.
- **Auto sequence** : Auto switching function support one CH and 4-div auto switching function .
- **Menu** : Press “Menu” to enter setup page or save the setting and exit.
- **Info** : Display system information.
- **Frez** : 1. CH in full screen : press freeze button to freeze a screen.
  2. In division mode : press freeze button, then select a camera number to freeze.
- **Zoom** : In zoom mode, the bright area in a box will zoom in, press arrow key to move to the area desired then press “ ⮌ “ to zoom in and press “ZOOM” button again to exit.
- **USB** : USB storage backup.
  Movie Mode : Press “USB” button to start backup and press again to stop.
  Still Mode : First switch CH to full screen mode then press “USB” button to take snapshot and backup to USB storage.
- **Lock** : Press “LOCK” button, the led of lock will light. The keyboard of front panel are disable. Press “LOCK” again and enter password to unlock it.
- **Jog / Shuttle** : Shuttleˇ As you turn, the speed of display increase. Jogˇ As you turn left or right, display images move step by step.
- **Rec** : Press ”REC” to start record.
- **Stop** : Press ”STOP” to stop playback or record.
- **Pause** : Playback modeˇ press “ ❚❚ to pause playback. Monitor / Record Modeˇ press “ ❚❚ ” to lock the display. The monitor will be in black, to enable it again, pleas enter password.
- **Play** : Press play button to enter playback Menu.
- **Direction** : Select the setup item or adjust setting.
- **Enter** : Enter the sub menu.

ˇPassword authorization, press the page 25.

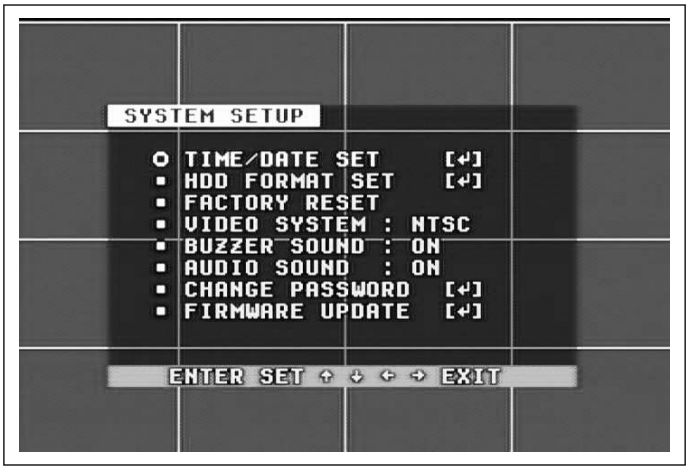
4 SETUP MODE



ˇBASIC OPERATIONˇ

Ⓐ Press ”**Menu**” to enter setup Mode.
Ⓑ Enter ”**Password**” and login the system.
Ⓒ Press “ ▼▲◄► ” button to move to setup Item.
Ⓓ Press “ ↵ ” to enter sub-Menu.
Ⓔ Press “**Menu**” to Exit.

4.1 SYSTEM SETUP

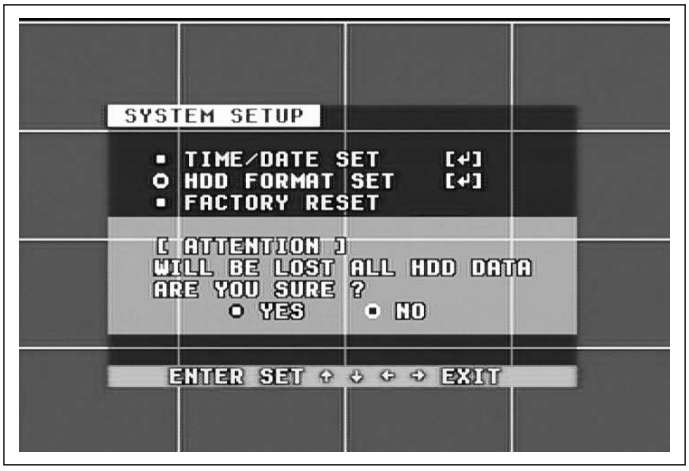


4.1.1 SYSTEM SETUP ˇ TIME / DATE SETUP

When fist time operate DVR, please enter this page for time setting.

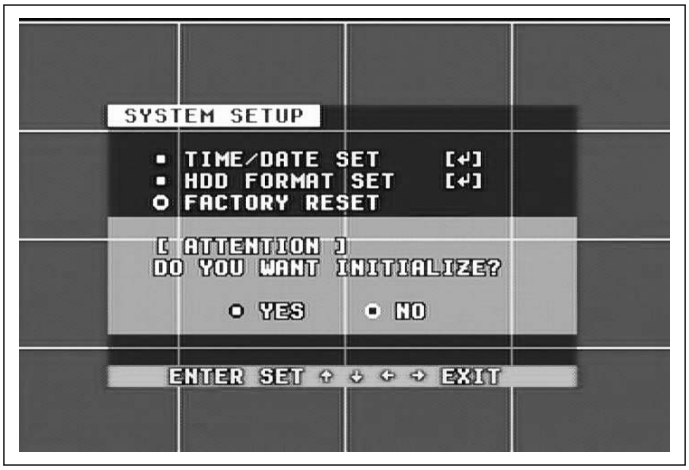
Date : Set the Date.
Time : Set the Time.
Format : Select the display format.
Display : Set the time display ON / OFF.
Local : Set the display location TOP / DOWN.

4.1.2 SYSTEM SETUP ˇ HDD FORMAT



Press “YES” to format the HDD.
Attention : All the HDD Data will be removed.

4.1.3 SYSTEM SETUP ˇ FACTORY RESET



System will be initialized and back to factory default.
ˇ Please refer the following factory default list.

ˇ FACTORY SETUP TABLE

1'st Menu	2'nd Menu	3'rd Menu	Default
SYSTEM SET	TIME/DATE SET	DATE	NO
		TIME	NO
		FORMAT	YYYY/MM/DD
		DISPLAY	ON
		LOCAL	TOP
	HDD FORMAT SET		NO
	FACTORY RESET		NO
	VIDEO SYSTEM		NO
	BUZZER SOUND		ON
	AUDIO SOUND		ON
	CHANGE PASSWORD	ADMIN PASSWORD CHANGE	1111
		USER PASSWORD CHANGE	2222
	FIRMWARE UPDATE	UPDATE METHOD	NO
		UPDATE START	NO
DISPLAY SET	CAMERA NAME		NUMBER
	COLOR SET	CON	50

DISPLAY SET		BRI	50
		HUE	50
		SAT	50
	AUTOSEQ SET		02 SEC
	BOUND COLOR		WHITE
	BLANK COLOR		BLUE
RECORD SET	OVER WRITE		YES
	REC SPEED		60F/SEC
	REC QUALITY		HIGH
	PB SPEED		AUTO
	RECORD CH SET		ON
	AUDIO SELECT		OFF
NETWORK SET	IP ADDR		NO
	GATEWAY		NO
	SUB NET		NO
	IP MODE		STATIC IP
	N/W ENABLE		ON
	VIDEO PORT		5000
	COMMAND PORT		5001
	MAC ADDR		
SENSOR SET	CHANNEL SELECT		
	ALARM ENABLE		N.O.
	MOTION ENABLE		OFF
	MOTION LEVEL		NORMAL
	MOTION AREA SET		
	BUZZER TIME		05 SEC
	SENSE RECTIME		10 SEC
SCHEDULE SET	SCHEDULE RECORD		OFF
BACKUP SET	USB BACKUP	BACKUP MODE	MOVIE
		USB INFORMATION	
	CD_RW BACKUP	START TIME SET	
STORAGE INFO			

4.1.4 SYSTEM SETUP ˇ VIDEO SYSTEM

Press ◀ ▶ to select video system to NTSC / PAL.

4.1.5 SYSTEM SETUP ˇ BUZZER SOUND

To turn on / off the Buzzer. The system will be muet when buzzer is off.

4.1.6 SYSTEM SETUP ˇ AUDIO SOUND

To turn on / off audio output. To setup sound record CH, please refer Record setup

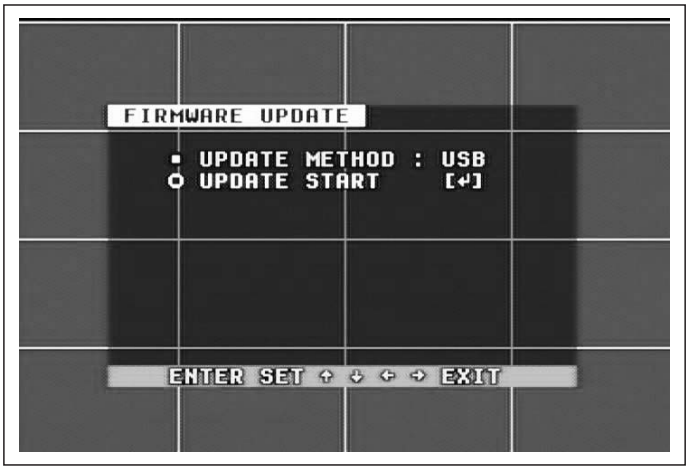
4.1.7 SYSTEM SETUP ˇ CHANGE PASSWORD

a. Password Change.

b. Setup password level.

ˇPlease refer to page 25 ”Password Authorization Table”

4.1.8 SYSTEM SETUP ˇ FIRMWARE UPDATE



- Update Method USB.
  Put the update software on X://Firmware (Disk X is USB storage, the name will be changed depending on each PC equipment).
- Plug USB storage on DVR and select update start.
- After update, please reboot the DVR. The system will be initialized to factory default.

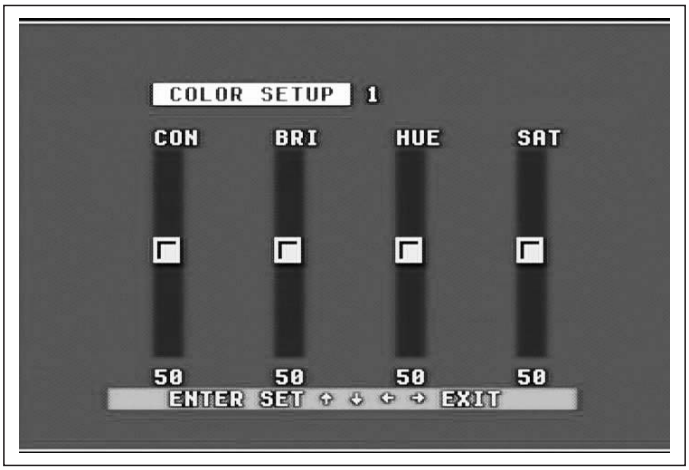
4.2 DISPLAY SETUP

Press " ↵ " to enter sub-menu.
Press "Menu" to save and exit.

4.2.1 DISPLAY SETUP ˇ CAMERA NAME

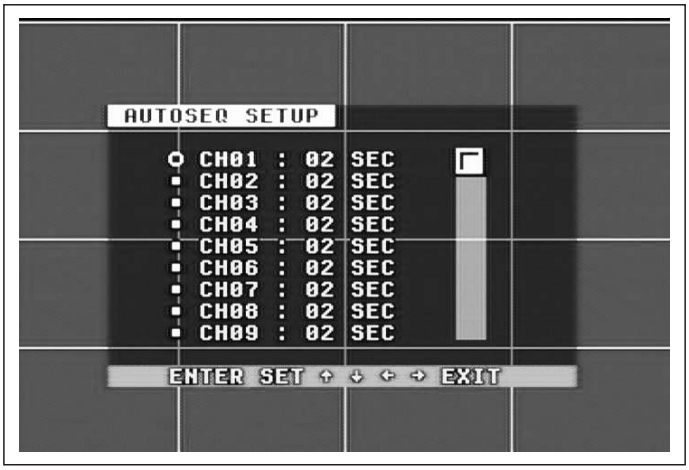
- Press " ▲▼ " button to select camera then press " ↵ " to enter setup.
  Using " ▲▼◀▶ " to enter letter (Alphabet, numbers and symbols).
  Press " ↵ " to save and move to next channel.

4.2.2 DISPLAY SETUP ˇ COLOR SET



- Adjust colors of images from cameras.
  First select the CH then adjust the "Contrast" "Brightness" "Hue" and "Saturation" as your preference.

4.2.3 DISPLAY SETUP ˇ AUTOSEQ SETUP


AUTOSEQ SETUP
CH01 : 02 SEC
CH02 : 02 SEC
CH03 : 02 SEC
CH04 : 02 SEC
CH05 : 02 SEC
CH06 : 02 SEC
CH07 : 02 SEC
CH08 : 02 SEC
CH09 : 02 SEC
ENTER SET ↑ ↓ ← → EXIT

- Setup the display time of each CH when you press "Auto" botton, display time 0-99 secs. 0 sec means the CH will be ignored and no display.

4.2.4 DISPLAY SETUP ˇ BOUND COLOR

The color of video bound can be “White” ,”Gray” or “Black”.

4.2.5 DISPLAY SETUP ˇ BLANK COLOR

Set the background color of less video (Black / Blue).

4.3 RECORD SETUP

4.3.1 RECORD SETUP ˇ OVER WRITE

When HDD is full, select “NO” is to stop record “YES” is to overwrite HDD.

4.3.2 RECORD SETUP ˇ RECORD SPEED

Set the record speed max.60 fps in field, 120 fps in CIF.

ˇRecord Hour Sheet :

RESOLUTION	FPS	QUALITY			
		NTSC			
		Hight+	Hight	Low+	Low
720 * 240	60	8.8 GB / hour	6.4 GB / hour	4.9 GB / hour	4.2 GB / hour
	30	4.6 GB / hour	3.4 GB / hour	2.9 GB / hour	2.5 GB / hour
	20	2.2 GB / hour	1.6 GB / hour	1.32 GB / hour	1.2 GB / hour
		PAL			
720 * 288	50	8.2 GB / hour	5.8 GB / hour	5.4 GB / hour	4.7 GB / hour
	25	4.0 GB / hour	2.9 GB / hour	2.3 GB / hour	2.0 GB / hour
	12	2.0 GB / hour	1.4 GB / hour	1.2 GB / hour	0.8 GB / hour

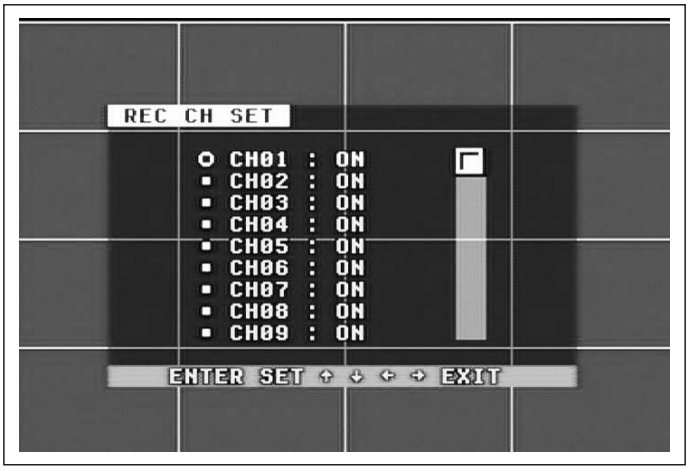
4.3.3 RECORD SETUP ˇ OVER WRITE

Record Quality can be High+, High , Low+, Low .
Highest quality means low compression rate, big size and short record time.
Please refer “Record Hour Sheet”.(Page 12)

4.3.4 RECORD SETUP ˇ PB SPEED

Set the play back speed. The default setting is same with record speed.

4.3.5 RECORD SETUP ˇ RECORD CH SET

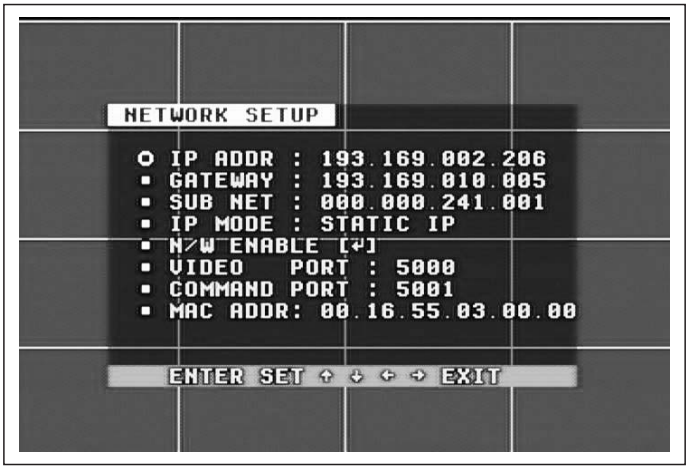


To setup if camera will record or not when record button of DVR is pressed.

4.3.6 RECORD SETUP ˇ AUDIO SELECT

This DVR support one CH audio record, when camera is selected as audio record the name of camera will be in “Yellow Color”.

4.4 NETWORK SETUP



For remot monitor / view, please enter the related setting of TCP/ IP.

4.4.1 NETWORK SETUP ˇ IP ADDRESS

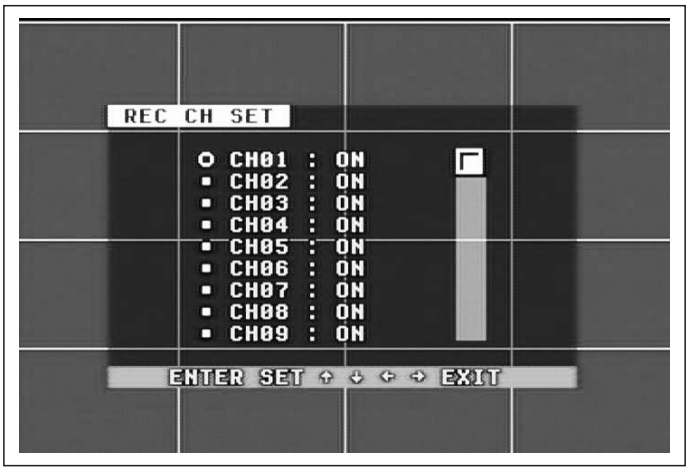
4.4.2 NETWORK SETUP ˇ DEFAULT GATEWAY

4.4.3 NETWORK SETUP ˇ SUBNET MASK

4.4.4 NETWORK SETUP ˇ IP MODE (DHCD)

When DHCP (Dynamic IP) is on the DVR will receive above parameters from DHCP server.

4.4.5 NETWORK SETUP ˇ N / W ENABLE



To enable / disable the camers is viewed in remote.

4.4.6 NETWORK SETUP ˇ VIDEO PORT (Factory default 5000)

4.4.7 NETWORK SETUP ˇ COMMAND PORT (Factory default 5001)

4.4.8 NETWORK SETUP ˇ MAC ADD (MAC Address can't be revised)

4.5 SENSOR SETUP

SENSOR SETUP
CHANNEL SELECT: 1
ALARM ENABLE : N.O
MOTION ENABLE : OFF
MOTION LEVEL : NORMAL
MOTION AREA SET [↵]
BUZZER TIME : 05 SEC
SENSE RECTIME : 10 SEC
ENTER SET ↑ ↓ ← → EXIT

To setup if camera start record by alarm sensor or motion trigger.

4.5.1 SENSOR SETUP ˇ CHANNEL SELECT

Press ◀ ▶ to select channel.

4.5.2 SENSOR SETUP ˇ ALARM ENABLE

Select alarm sensor type (N.O, N.C, or close)

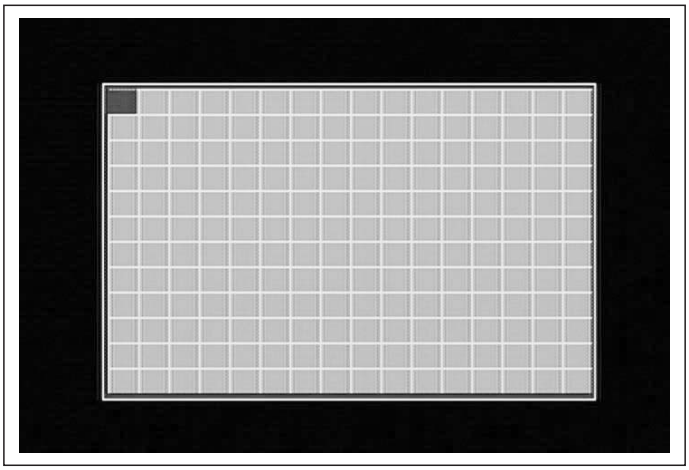
4.5.3 SENSOR SETUP ˇ MONTION ENABLE

Enable / disable motion Detection Record.

4.5.4 SENSOR SETUP ˇ MONTION LEVEL

Setup the sensibilty of motion level (Hight^{+},Hight, Normal, Low,$^{+}$ Low).

4.5.5 SENSOR SETUP ˇ MOTION AREA



Yellow block represents motion detection area.
Dark block means motion is off.

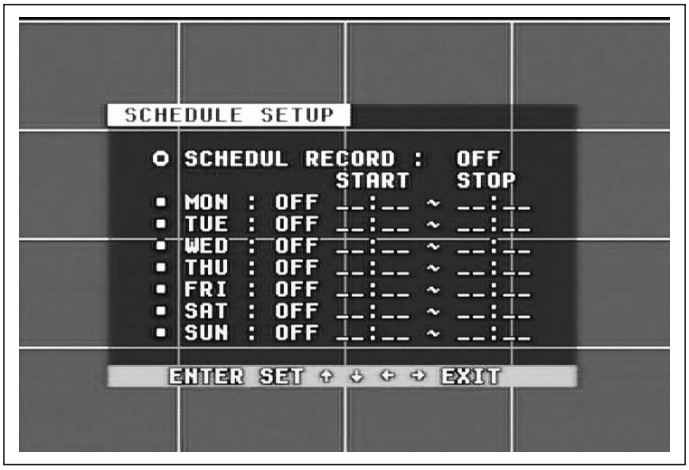
4.5.6 SENSOR SETUP ˇ BUZZER TIME

Set the buzzer time on motion 1-99 secs.

4.5.7 SENSOR SETUP ˇ SENSE RECTIME

Set the record time when motion / sensor is triggered.(10-99 secs)

4.6 SCHEDULE SETUP



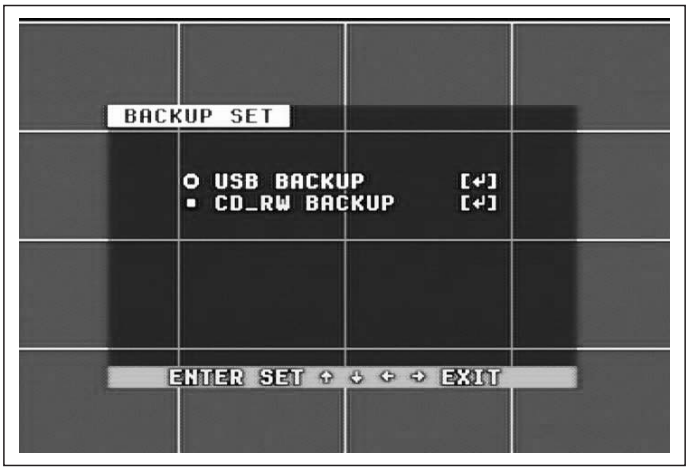
4.6.1 SCHEDULE SETUP ˇ RECORD SCHEDULE

To select if DVR will be recorded by schedule.

4.6.2 SCHEDULE SETUP ˇ SCHEDULE EVERYDAY

Setup the recording schedule every day.

4.7 BACKUP SETUP



This DVR supports CD-RW and USB backup , please select backup device.

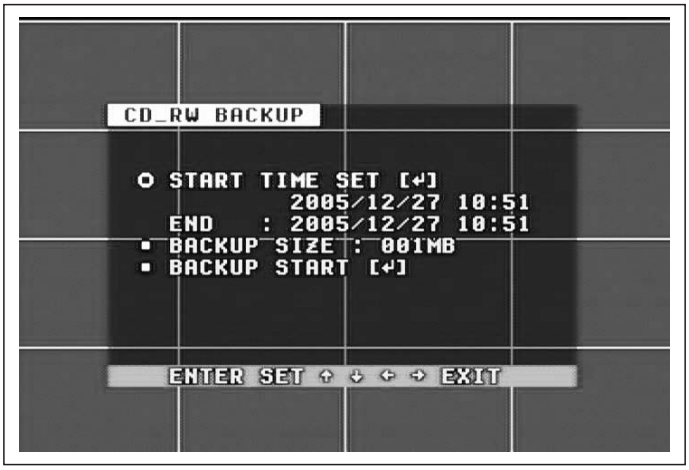
4.7.1 BACKUP SETUP ˇ USB STORAGE

- Select the backup type (Movie / Still)
- USB information : status of USB storage and information of space used.

ˇ Caution

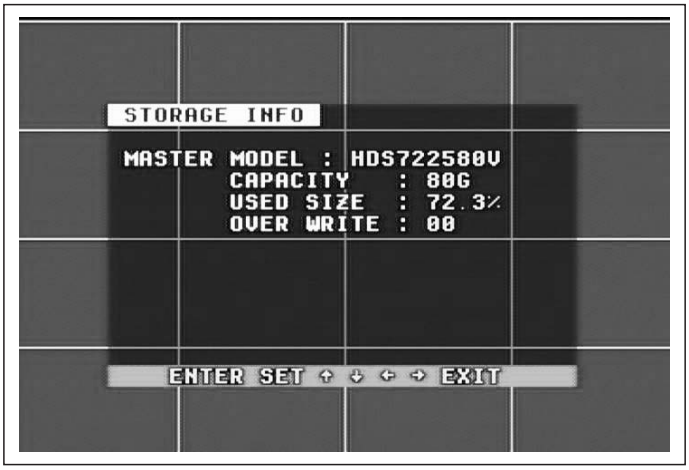
A fatal error may occur if the USB storage is remved while backup is under way.

4.7.2 BACKUP SETUP ˇ CD-RW BACKUP



a. Setup the start time.
b. Setup the backup size (the system will automatically calculated the end time).
c. Put the blank CD-R in CD-ROM.
d. Press backup start.
ˇp.s. If CD-RW is using, press “USB” button to format.

4.8 STORAGE INFO



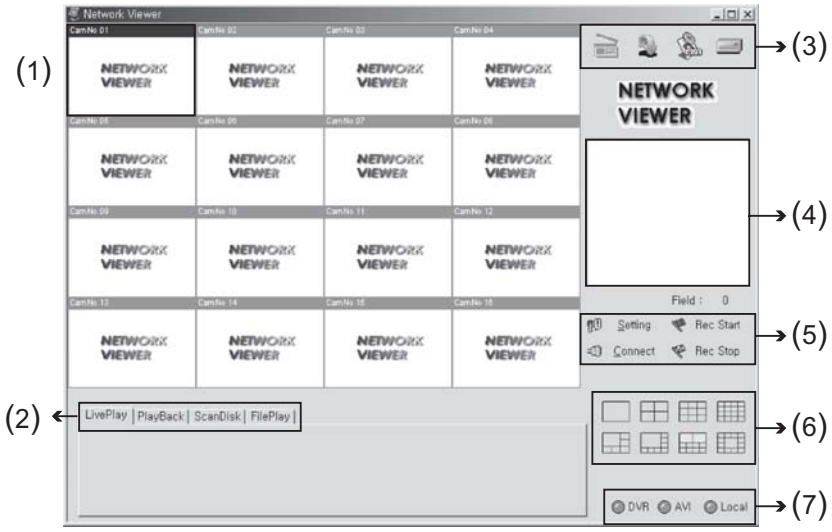
Show the HDD statue (Mode NO, used size, overwrite).

5 NETWORK VIEWER MANUEL

ˇ INTRODUCTION

The Network Viewer software is using for remote monitor, playback and backup.

ˇ INTERFACE



(1) **Camera No.**

To display image of each Channel.

(2) **Select a suitable Player:**

There are 4 Players for different file types.

LivePlay ˇReal Time display the image of DVR in remoteˇ

PlayBack ˇPlayback the recorded film or even.

ScanDisk ˇIf the film is backed up on CD-ROM, using ScanDisk player to play the film.

FilePlay ˇIf the film is backup on USB or on PC HDD, select the FilePlay to play.

(3) **Bakup Function**

Real time monitor	Press to start monitor in remote.
Stop/Pause	Stop monitor or backup file.
AVI Format	Convert the file to .AVI formatˇ
HDD Backup	Backup film to HDD on Remote PC (Using FilePlay to play)

(4) **Channel Information**

Display the current stream information of each channelˇ

(5) **Network Function**

Setting	TCP/IP Setup and AVI Code select.
Connect	Connect to DVRˇ
Disconnect	Disconnect
RecStart	DVR Start recording.
RecStop	DVR Stop recording

(6) **Display mode:**

Select the different display mode, CH, 4-Division, 9-Divison or 16-Division.

(7) **Statue indicator.**

DVRˇDVR recordˇ

┌ AVIˇConvert the film to .AVI formatˇ

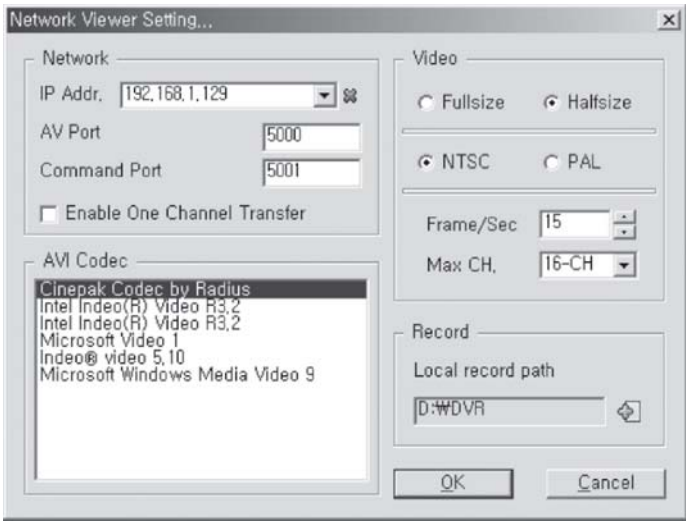
┌ Localˇ Backup the film to Remote PC, Local is lighted.

ˇ **Network connection Settings**

ˇSetup the IP Address of DVR and AV and Command Portˇ

ˇEnable One Channel Transfer: To improve video stream fluency through the internet, Click this function. It's for remote monitor only, for backup in remote, please disable it.

ˇSelect a suitable AVI Codec to convert the film to .AVI format.



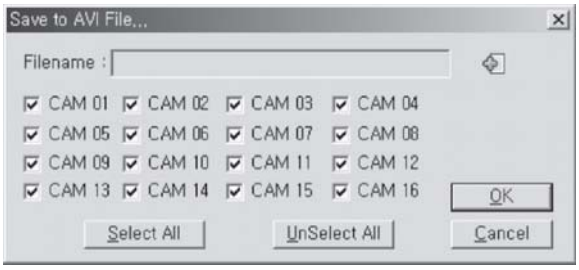
ˇOn Video Section, You can setup the image size and video system and fram/sec.

ˇOn Record Section, select the file folder on remote PC.

ˇ AVI Backup

Select the Channel No. you want to backup and click the OK to start backup.

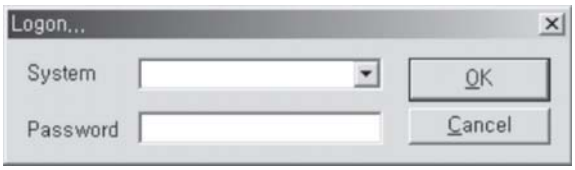
When backup is finished, just click to stop backupˇ


Save to AVI File...
Filename :
CAM 01 CAM 02 CAM 03 CAM 04
CAM 05 CAM 06 CAM 07 CAM 08
CAM 09 CAM 10 CAM 11 CAM 12
CAM 13 CAM 14 CAM 15 CAM 16
OK
Select All
UnSelect All
Cancel

ˇAttentionˇTo convert to .AVI format may cause the CPU overload, please update the PC Equipment or using HDD Backup instead of.

ˇ Connect

Click Connect buttonˇthe following dialogue box will pop-on.



Enter the correct IP Address(same with DVR) and Passwordˇ
Click “OK” button, the Network Viewer will try to connect to DVR, if the connection is succeeded the following dialogue box will appear.

If fail to connect DVR, please check the IP Address, Password and related internet setting and try again.

ˇLivePlay

Press button to start recordingˇ

When recording, press button to store the recorded data as AVI format.

Click right button of mouse, store the recorded data as JPEG format or RESET indicated channel.

ˇPlayBack

There are two options for starting DVR playback to get event play and timed play.

ˇEvent Play

HDD selectionˇGet Event ListˇSelect Event listˇClick Event segmentˇStart playback

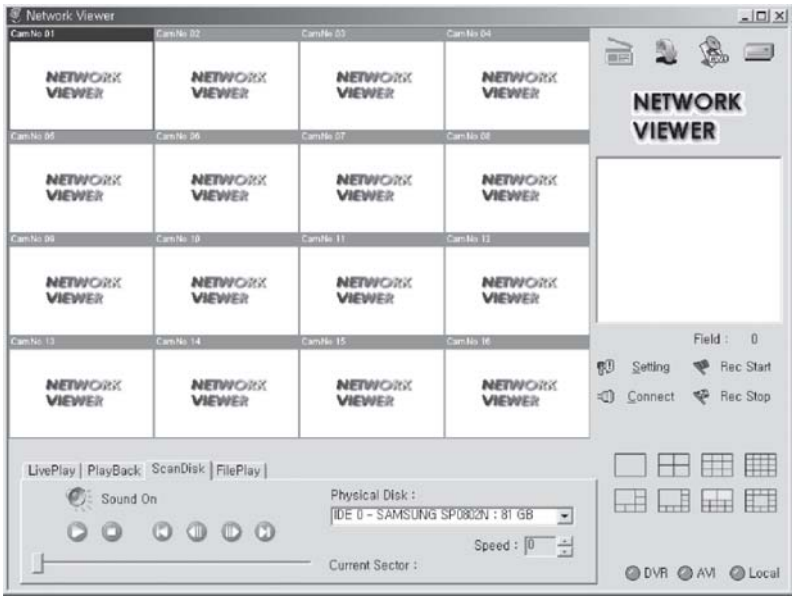
ˇTimed Play

HDD selectionˇGet Record ListˇSelect Record ListˇClick Event segmentˇStart Playback.

Press to stop playback.

ˇScanDisk

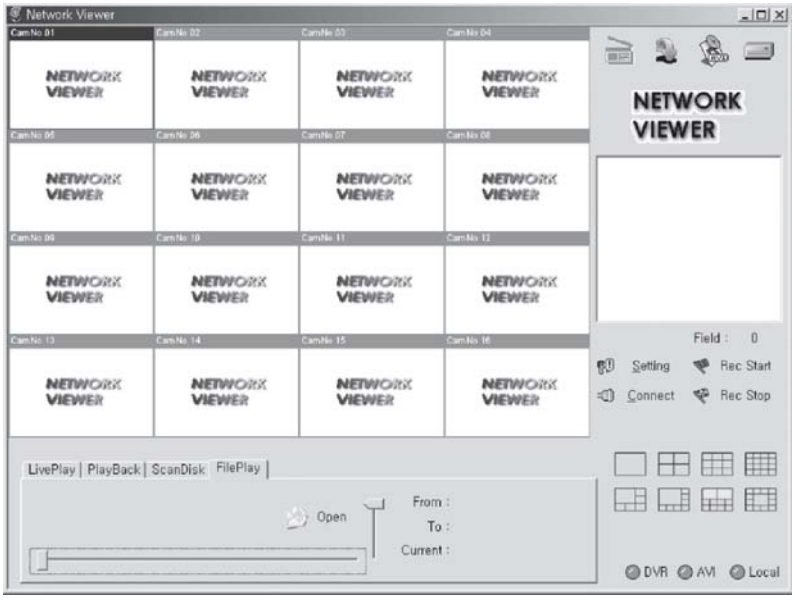
Display recorded data that backup over CD-ROM when press Scan Disk button.
Select the path of CD-ROM in Physical Disk bar.
You can adjust speed of playback.
To turn on / off Audio when press Sound button.



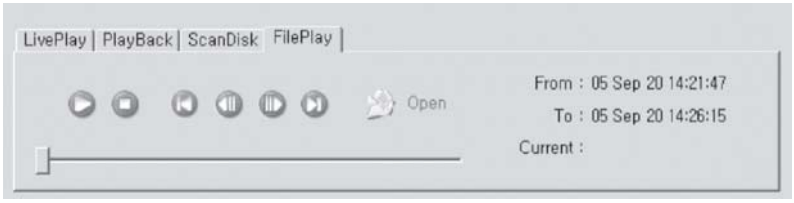
ˇFilePlay

ˇPressFilePlaybutton.

ˇPressOpentoplaybacktherecordeddata.



You can playback the recorded data when main screen shows the following panel.



ˇPASSWORD AUTHORISATIONˇ

	Adminiostor	Normal User	W/O Authoristaion
Reboot DVR	☑	☑	☑
Record	☑	☑	☑
Monitor	☑	☑	NO
Un-lock Display	☑	☑	NO
Un-lock Keyboard	☑	☑	NO
Playback	☑	☑	NO
Pause	☑	☑	NO
Enter Menu	☑	NO	NO
Network Viewer	☑	NO	NO

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